

Ostracode Biostratigraphy in the  
Bottom 395 feet of CGTC Well #20403,  
Lincoln County, West Virginia

by

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Consulting Geologist

25 July 1978

PRELIMINARY  
OPEN FILE REPORT

Subject to Revision

(Funded by the West Virginia Geological and  
Economic Survey under USDOE contract no.  
EY-76-C-05-5199, consultant contract no. 003)

EGSP  
OPEN FILE # 109

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INTRODUCTION

Approximately 840 ostracode specimens were recovered from 60 samples from the bottom 395 ft. of CGTC Core 20403. The 1 kilogram collections represented a series of channel samples of approximately 6 ft. segments and were processed by the method of Duffield and Warshauer (in press). Of the original 60 samples only 37 were found to contain ostracodes. All of the identifiable specimens could be subdivided into 21 generic level categories with 11 of the taxa being well enough preserved for specific assignment. Unfortunately crushing, coarse recrystallization and pyritization rendered many of the specimens unidentifiable.

THE OSTRACODE FAUNA

The following taxa were found to occur:

Amphissites carmani Stewart and Hendrix, 1945

A. shafferi Stewart and Hendrix, 1945

Bairdia ? sp.

Bertillonella subcircularis Stewart and Hendrix, 1945

Bythocyproidea sp.

Coelonella punctilifera Stewart and Hendrix, 1945

Coelonella n. sp.

Cytherellina sp.

Entomozoe prolificata (Stewart and Hendrix, 1945)

Eriella robusta Stewart and Hendrix, 1945

Kirkbyella sp.

Quasillites sp.

Richterina symmetrica Stewart and Hendrix, 1945

Ropolonellus sp.

Sansabella? curiosa Stewart and Hendrix, 1945

Senescella (Plagionephrodes) crassimarginata Stewart  
and Hendrix, 1945

Thrallella mimica Stewart and Hendrix, 1945

Ulrichia sp.

Ungerella novecosta (Stewart and Hendrix, 1945)

Ostracode indet. A

Ostracode indet. B

See Figure 1 for the stratigraphic distribution of these taxa in  
the core.

#### AGE OF THE FAUNA

Very few studies of Upper Devonian Ostracodes have been undertaken in North America (Braun, 1976; Gibson, 1955; McGill, 1963; Stewart and Hendrix, 1945b). This fact is unfortunate as it makes intracontinental correlations of the fauna difficult. However, of the 11 specific level taxa occurring in these collections, 10 of them are known from the Upper Olentangy Shale of Ohio (Stewart and Hendrix, 1945b). The remaining species, Eriella robusta, is also known from Ohio, but from the Middle Devonian Plum Brook Shale (Stewart and Hendrix, 1945a). Middle Devonian Ostracodes in North America, on the other hand, have been studied to a much greater extent and are therefore much better understood (see Tillman 1978 for a fairly complete reference list). The present fauna does not correlate with any of the published studies

On Middle Devonian Ostracodes. Based on these observations, I feel that the ostracodes studied herein indicate an Upper Devonian age for the fossiliferous horizons. It must be pointed out, however, that an examination of Figure 1 indicates a lack of ostracodes for the lower 15 samples (46-60; 94.5 ft.). Additionally, on studying the lithologic description of this core (Byrer et al., 1976), one observes a color change beginning at the none ostracodes-bearing horizons; the shales change from being mainly greenish greys to being mainly darker greys. This change may indicate the contact between the Upper and Lower Olentangy as described by Tillman for Central Ohio (1970). Tillman demonstrated a Middle Devonian age for the Lower Olentangy based on both ostracodes and megafossils. None of the Middle Devonian Ostracodes reported by Tillman from the Lower Olentangy occurs in CGTC Core #20403.

If I am correct in my interpretation, the Middle Devonian portion of the Olentangy may well be represented by the none ostracode bearing samples at the bottom of the core. At this time, I must speculate that some sort of paleoenvironmental changes caused both a color change in the rocks and benthic conditions that were not suitable for ostracode habitation. The question of whether or not the bottom of the core is Middle Devonian in age must await the results of a conodont study presently in progress, as conodonts have been recovered from this interval.

#### REFERENCES CITED

- Braun, W. 1976. Upper Devonian ostracod faunas of Great Slave Lake and northeastern Alberta, Canada. Internat. Symp. Devon.

Syst., 2:617-652.

Byrer, C.W., M.K. Vickers, S.J. Rhoades and B.G. Easterday. 1976.

Lithologic description of cored wells #20402 and #20403 in the Devonian Shale in Lincoln County, West Virginia. MERC/TPR-76/9, Dept. of Energy, Morgantown, WV.

Duffield, S.L. and S.M. Warshauer. In press. A two step process for the disaggregation of organic shales. Jour. Paleont.

Gibson, L.B. 1955. Upper Devonian Ostracoda from the Cerro Gordo Formation of Iowa. Bull. Amer. Paleont., 35(154):1-38.

McGill, P. 1963. Upper and Middle Devonian Ostracodes from the Beaverhill Lake Formation, Alberta, Canada. Bull. Canad. Petrol. Geol. 11(1):1-26.

Stewart, G.A. and W.E. Hendrix. 1945a. Ostracoda of the Plum Brook Shale, Erie County, Ohio. Jour. Paleont., 19(2):87-95.

Stewart, G.A. and W.E. Hendrix. 1945b. Ostracoda of the Olentangy Shale, Franklin and Delaware Counties, Ohio. Jour. Paleont., 19(2):96-115.

Tillman, J.R. 1970. The age, stratigraphic relationships and correlation of the lower part of the Olentangy Shale of Central Ohio. Ohio Jour. Sci., 70:202-217.

Tillman, J.R. and S.E. Murphy. 1978. Ostracodes of the superfamily Hollinacea from Middle Devonian rocks of Central Ohio. Jour. Paleont., 52(2):411-439.

APPENDIX

The following is a list of the ostracode bearing samples. Included in the listings will be the taxa occurring in each sample and the number of specimens referable to each. See Figure 1 for the stratigraphic location of each sample.

<u>Sample no.</u>	<u>Taxon</u>	<u>No. of specimens</u>
2	<u>Bairdia</u> sp.	3
	<u>Cytherellina</u> sp.	1
	unidentifiable	1
9	<u>Thrallella mimica</u>	1
	<u>Coelonella punctilifera</u>	5
	<u>Sansabella curiosa</u>	1
	unidentifiable	1
10	<u>Amphissites carmani</u>	1
	<u>Eriella robusta</u>	7
	<u>Coelonella punctilifera</u>	23
	unidentifiable	1
11	<u>Coelonella punctilifera</u>	14
	<u>Sansabella curiosa</u>	1
	<u>Bertillonella subcircularis</u>	1
	<u>Robolonellus</u> sp.	1
	unidentifiable	3

12	<u>Coelonella punctilifera</u>	2
	unidentifiable	4
13	<u>Coelonella punctilifera</u>	12
	<u>Amphissites carmani</u>	3
	<u>Thrallella mimica</u>	1
	unidentifiable	36
14	<u>Amphissites shafferi</u>	6
	<u>Ulrichia</u> sp.	1
	<u>Coelonella punctilifera</u>	23
	<u>Richterina symmetrica</u>	2
	<u>Thrallella mimica</u>	2
	<u>Kirkbyella</u> sp.	6
	unidentifiable	40
15	unidentifiable	14
16	<u>Coelonella punctilifera</u>	16
	<u>Thrallella mimica</u>	5
	<u>Senescella crassimarginata</u>	2
	Ostracode indet. A	1
	unidentifiable	24
17	<u>Eriella robusta</u>	5
	<u>Coelonella punctilifera</u>	10
	<u>Quasilites</u> sp.	4
	unidentifiable	9

18	<u>Richterina symmetrica</u>	17
	<u>Thrallella mimica</u>	1
	<u>Cytherellina sp.</u>	4
	unidentifiable	8
19	<u>Coelonella punctilifera</u>	2
	<u>Richterina symmetrica</u>	2
20	<u>Coelonella punctilifera</u>	15
	<u>Eriella robusta</u>	1
	unidentifiable	1
21	<u>Coelonella punctilifera</u>	6
	<u>Bertillonella subcircularis</u>	2
22	<u>Richterina symmetrica</u>	34
	<u>Bertillonella hemispherica</u>	2
	<u>Eriella robusta</u>	1
	<u>Coelonella punctilifera</u>	8
	<u>Cytherellina sp.</u>	2
	unidentifiable	4
23	<u>Senescella crassimarginata</u>	1
	unidentifiable	1
25	<u>Coelonella punctilifera</u>	5
	<u>Bertillonella subcircularis</u>	1

	<u>Eriella robusta</u>	1
	unidentifiable	3
26	<u>Coelonella punctilifera</u>	1
	unidentifiable	1
27	unidentifiable	1
28	<u>Coelonella punctilifera</u>	1
	<u>Eriella robusta</u>	1
29	<u>Coelonella punctilifera</u>	27
	<u>Thrallella mimica</u>	3
	Ostracode indet. B	1
30	<u>Coelonella punctilifera</u>	3
	<u>Eriella robusta</u>	1
31	<u>Coelonella punctilifera</u>	5
	<u>Thrallella mimica</u>	2
	unidentifiable	2
32	<u>Coelonella punctilifera</u>	3
	<u>Eriella robusta</u>	1
	unidentifiable	5
33	<u>Coelonella punctilifera</u>	6

	<u>Richterina symmetrica</u>	1
	unidentifiable	1
34	<u>Coelonella punctilifera</u>	10
	<u>Thrallella mimica</u>	4
	<u>Eriella robusta</u>	1
	<u>Kirkbyella</u> sp.	1
	<u>Bythocyproidea</u> sp.	2
	unidentifiable	16
35	<u>Coelonella punctilifera</u>	5
	<u>Thrallella mimica</u>	3
	<u>Bertillonella subcircularis</u>	1
	<u>Kirkbyella</u> sp.	1
	<u>Coelonella</u> n. sp.	1
	unidentifiable	4
36	<u>Coelonella punctilifera</u>	15
	<u>Quasilites</u> sp.	1
	unidentifiable	4
37	<u>Coelonella punctilifera</u>	3
	<u>Coelonella</u> n. sp.	4
	<u>Bertilonella subcircularis</u>	2
	<u>Richterina symmetrica</u>	1
	<u>Quasilites</u> sp.	6
	unidentifiable	14

38	<u>Richterina symmetrica</u>	4
39	<u>Richterina symmetrica</u>	5
	<u>Coelonella punctilifera</u>	1
	<u>Bertillonella subcircularis</u>	3
	unidentifiable	2
40	<u>Richterina symmetrica</u>	12
	<u>Bertillonella subcircularis</u>	2
	unidentifiable	6
41	<u>Ungerella novecosta</u>	1
	<u>Bertillonella subcircularis</u>	1
	<u>Entomozoe prolifica</u>	2
	unidentifiable	2
42	<u>Ungerella novecosta</u>	2
	<u>Richterina symmetrica</u>	14
	<u>Bertillonella subcircularis</u>	13
	<u>Entomozoe prolifica</u>	11
	<u>Coelonella punctilifera</u>	5
	<u>Quasilites</u> sp.	16
	unidentifiable	117
43	unidentifiable	2
44	<u>Coelonella punctilifera</u>	2

11

Richterina symmetrica 3

Bertillonella subcircularis 2

unidentifiable 4

45           Richterina symmetrica 1

unidentifiable 3

